Capital Improvement Program Project Update

May 4, 2026

UNIONCOUNTY WATER

Agenda

Capital Program Overview

Projects:

- Water Projects
- Wastewater Projects
- Renewal and Replacement Projects
- Facilities Projects

Crooked Creek WRF

15-year Capital Improvement Program Overview FY26-FY40

Project Type	Project Count	Project Status	Budget
Water	20	Planning – 8 Design – 8 Construction - 4	$390M
Wastewater	15	Planning – 8 Design – 4 Construction - 3	$216M
Renewal & Replacement	28	Planning – 12 Design – 6 Construction - 10	$223M
Facilities	2	Planning – 0 Design – 1 Construction - 1	$16M
Total	**65**	**Planning – 28 Design – 19 Construction - 18**	**$845M**

Water Projects

UNIONCOUNTY
WATER

Catawba River Water Treatment Plant Expansion

Status

Not Started	Planning	Design	Construction
	■		

Scope

Project provides for the expansion of the CRWTP from 40 MGD to 56 MGD with Union County responsible for 50% of the total project cost.

Additional Details

Total Project Estimate	Estimated Completion Date
$114,824,579	FY30

821 Pressure Zone Transmission Main

Status

Not Started	Planning	Design	Construction
		■	

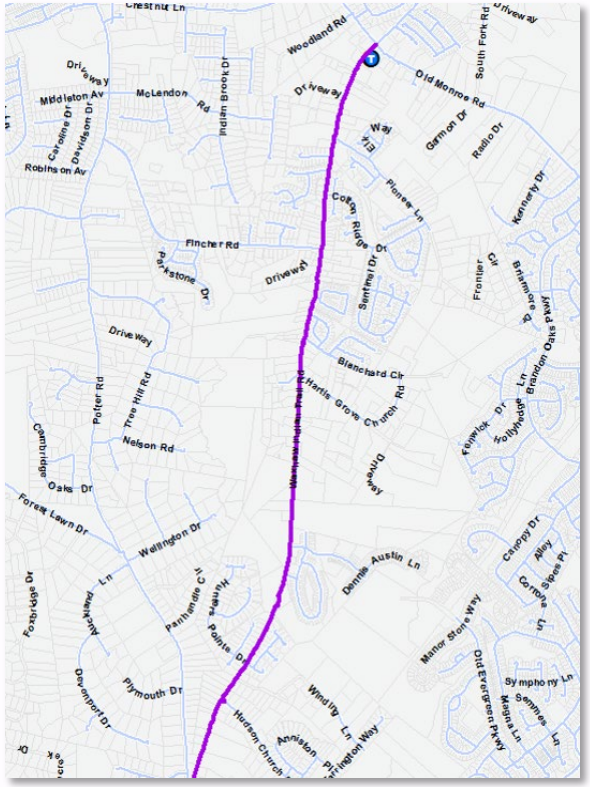
Scope

Project provides for the installation of approximately 20,000 feet of 36-inch and approximately 7,000 feet of 16-inch waterlines as betterments as well as relocations of existing 12-inch and 24-inch waterlines as part of the NCDOT U-5769 NC 16 Providence Road Widening Project between Rea Road and south of Providence Farms Road. Project addresses system pressure and fire flow deficiencies noted in the 2025 Water and Wastewater Master Plan.

Additional Details

Total Project Estimate	Estimated Completion Date
$15,857,000	FY32

853 Pressure Zone Transmission Main Phase III



Status

Not Started	Planning	Design	Construction
		■	

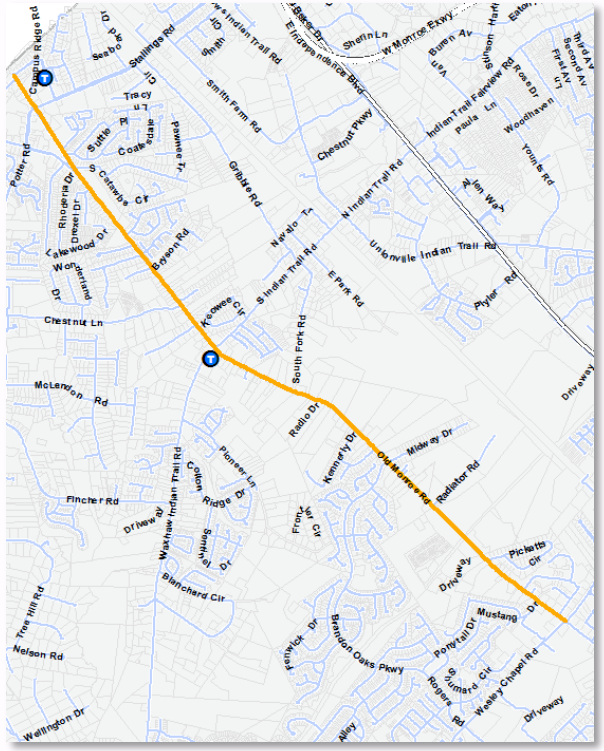
Scope

Project provides for the installation of approximately 17,000 feet of 16-inch waterline along Waxhaw-Indian Trail Road from Potter to Old Monroe Road. Project improves system hydraulic and transmission capacity deficiencies noted in the 2025 Water and Wastewater Master Plan.

Additional Details

Total Project Estimate	Estimated Completion Date
$10,865,580	FY28

853 Pressure Zone Transmission Main Phase IV



Status

Not Started	Planning	Design	Construction
		■	

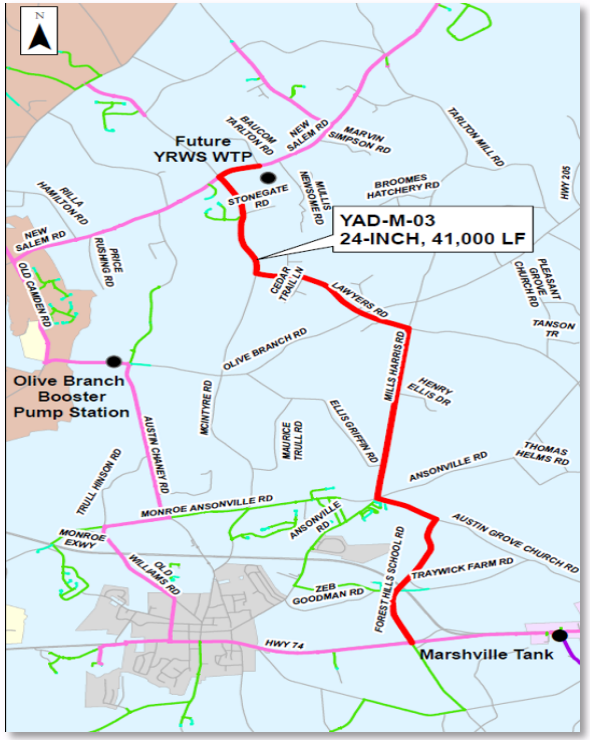
Scope

Project provides for the installation of approximately 21,000 feet of 16-inch waterline along Old Monroe Road from Stallings to Wesley Chapel Stouts Road as betterments as part of the NCDOT U-4741 Old Monroe Road Widening Project. Project improves system hydraulic and transmission capacity deficiencies noted in the 2025 Water and Wastewater Master Plan.

Additional Details

Total Project Estimate	Estimated Completion Date
$13,200,000	FY31

762 Pressure Zone 24-inch Yadkin Transmission Main



Status

Not Started	Planning	Design	Construction
			■

Scope

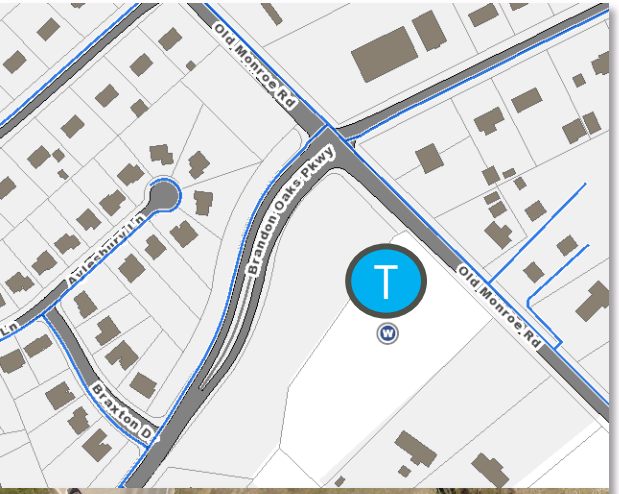
Project provides for the permitting, land acquisition, design, and construction of approximately 41,000 feet of 24-inch waterline from the Yadkin River Water Treatment Plant (YRWTP) to US 74 in the Town of Wingate as well as pumping improvements at the YRWTP to serve the 762 pressure zone.

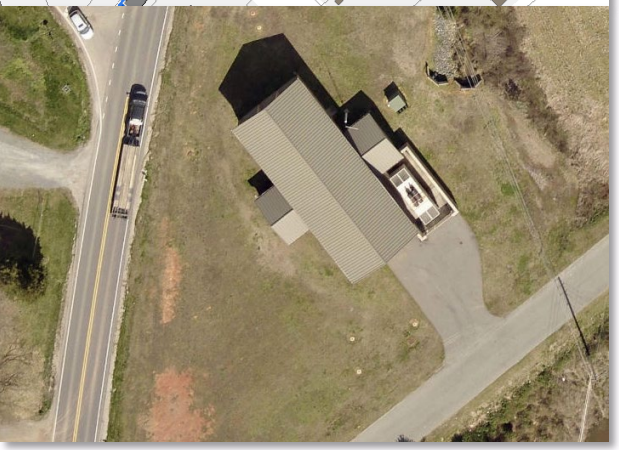
Additional Details

Total Project Estimate	Estimated Completion Date
$37,450,000*	FY26

*$35M ARPA funds from NCDEQ

853 West Elevated Storage Tank and Watkins Booster Pump Station Improvements





Status

Not Started	Planning	Design	Construction
		■	

Scope

Project provides for the permitting, design, and construction of a new elevated storage tank in Indian Trail, modifications to the Watkins Road Booster Pump Station, and other related improvements. Project addresses system storage and control deficiencies identified in the 2025 Water and Wastewater Master Plan.

Additional Details

Total Project Estimate	Estimated Completion Date
$17,161,000	FY29

Wastewater Projects

UNIONCOUNTY
WATER

12-Mile Creek WRF 9.0 MGD Expansion

Status

Not Started	Planning	Design	Construction
			■

Scope

Project provides for the expansion of capacity from 7.5 to 9.0 MGD and related improvements at the 12-Mile Creek WRF.

Additional Details

Total Project Estimate	Estimated Completion Date
$56,390,000*	FY28

*$26M NCDEQ funds

Grassy Branch WRF Expansion

Status

Not Started	Planning	Design	Construction
			■

Scope

Project provides for design, permitting, and construction of an expansion of the Grassy Branch WRF to 0.120 MGD. (The Grassy Branch WRF is under consent order due to permit violations related to daily discharge volume exceeding the current permitting flow of 0.050 MGD. The expansion to 0.120 MGD should eliminate future violations for the effluent flow exceeding the permitted discharge flow.)

Additional Details

Total Project Estimate	Estimated Completion Date
$11,750,000*	FY26

*$9.75M ARPA funds from NCDEQ

Crooked Creek WRF Filter Replacement Improvements

Status

Not Started	Planning	Design	Construction
		■	

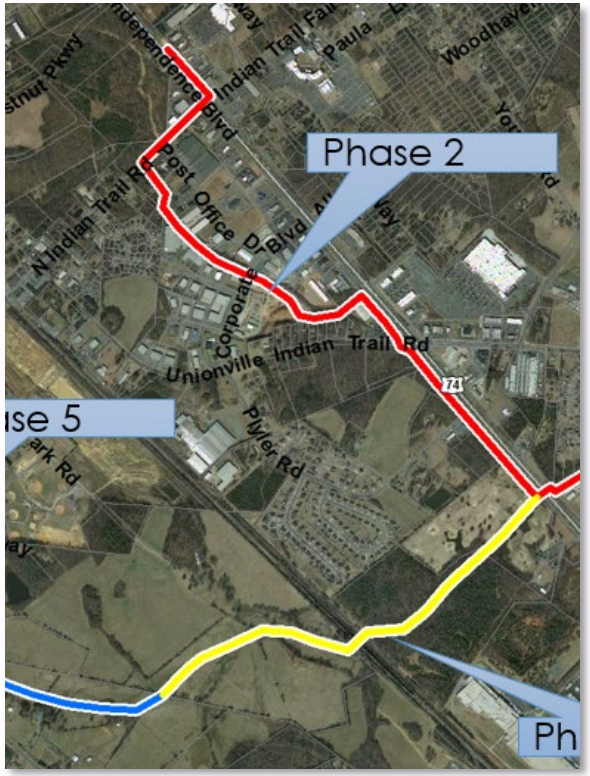
Scope

Project provides for design, permitting, and construction of a project to replace the existing effluent filter system and related improvements at the Crooked Creek WRF.

Additional Details

Total Project Estimate	Estimated Completion Date
$4,000,000	FY28

Crooked Creek Interceptor Improvements – Phase II



Status

Not Started	Planning	Design	Construction
			■

Scope

Project provides for design, permitting, and construction of approximately 14,300 feet of 30-inch, 24-inch, and 18-inch gravity sanitary sewer piping between the Crooked Creek WRF and Chestnut Parkway. Project addresses conveyance capacity limitations identified in the 2025 Water and Wastewater Master Plan.

Additional Details

Total Project Estimate	Estimated Completion Date
$20,670,400*	FY26

*$16M Union County ARPA funds

East Fork Interceptor Improvements

Status

Not Started	Planning	Design	Construction
		■	

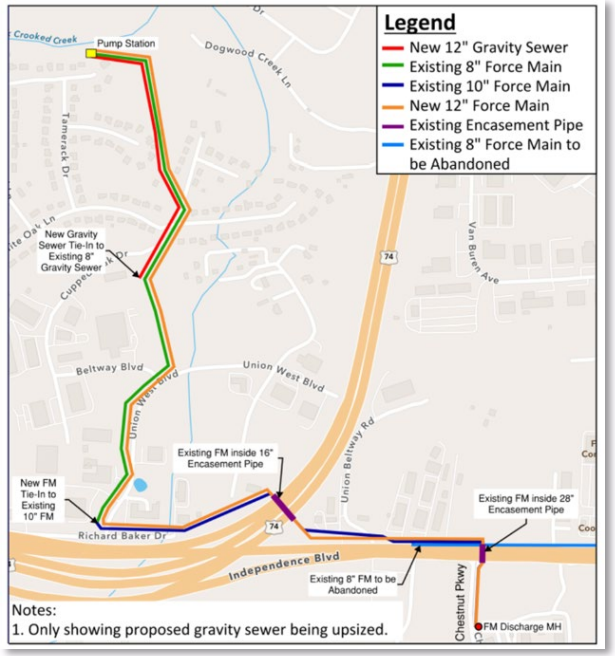
Scope

Project provides for design, permitting, and construction of approximately 30,000 feet of 30-inch gravity sanitary sewer piping between New Town and Providence Roads. Project addresses conveyance capacity limitations identified in the 2025 Water and Wastewater Master Plan.

Additional Details

Total Project Estimate	Estimated Completion Date
$46,452,000	FY31

Forest Park Pump Station and Forcemain Improvements



Status

Not Started	Planning	Design	Construction
		■	

Scope

Project provides for design, permitting, and construction of an upgrade to the Forest Park Pump Station, force main piping, gravity sewer, and related improvements. Project addresses wastewater conveyance capacity limitations identified in the 2025 Water and Wastewater Master Plan.

Additional Details

Total Project Estimate	Estimated Completion Date
$5,541,000	FY30

Renewal and Replacement Projects

UNIONCOUNTY WATER

FY22 Pump Station Rehabilitation

Status

Not Started	Planning	Design	Construction
			■

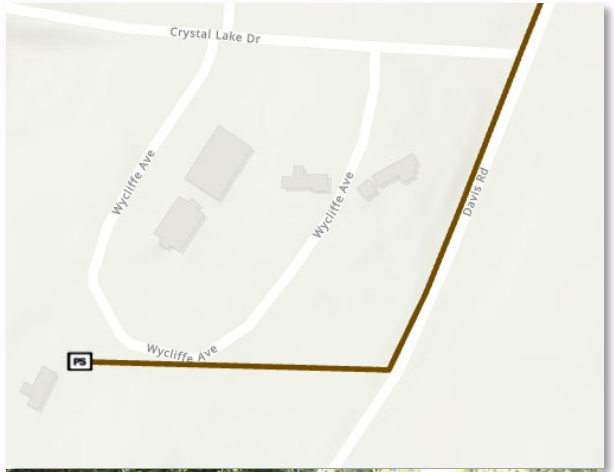
Scope

Project provides for design, permitting, and construction of upgrades to seven (7) pump stations which were identified in the condition assessment study including Olde Sycamore 1 and 2, Green Meadows, Suburban Estates 1, 2, and 3 and Magnolia Ridge.

Additional Details

Total Project Estimate	Estimated Completion Date
$3,700,000	FY27

JAARS Pump Station Replacement



Status

Not Started	Planning	Design	Construction
		■	

Scope

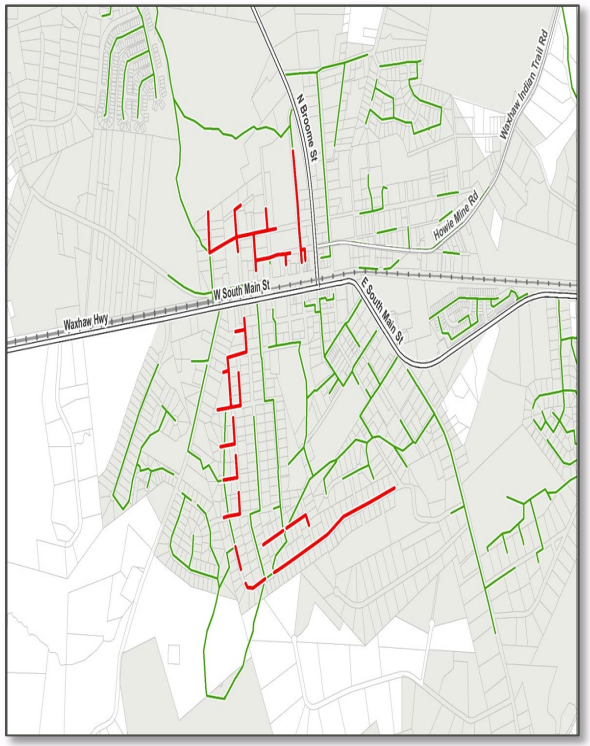
Project provides for design, permitting, and construction of the replacement of the JAARS Pump Station.

Additional Details

Total Project Estimate	Estimated Completion Date
$299,425*	FY28

*design cost only, construction cost TBD

Septic Tank and Effluent Gravity (STEG) System Improvements - Waxhaw



Status

Not Started | Planning | Design | Construction

Scope

Project provides for the condition assessment, design, permitting, and construction of the STEG system in the Waxhaw area. The STEG system includes approximately 12,000 feet of 4-inch gravity sanitary sewer piping and associated septic tanks for solids retention. The existing system, while functional, does not meet current collection system criteria and requires replacement.

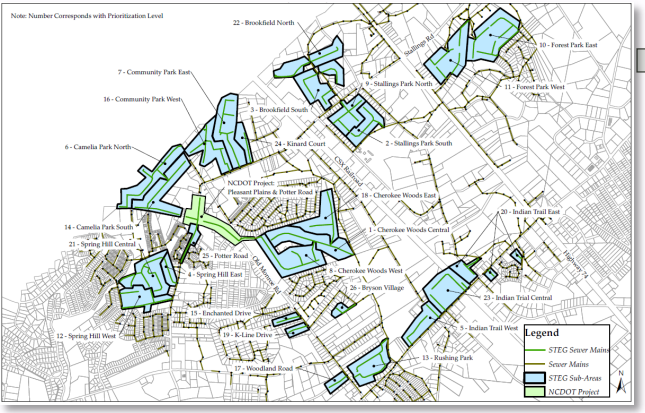
Additional Details

Total Project Estimate	Estimated Completion Date
$5,372,500*	FY27**

*$1.5M NCDEQ funds

**Year 1 of a two-year program rehabilitates north side of downtown Waxhaw. Year 2 is in design and rehabilitates south side of downtown Waxhaw with additional funding and completion in FY28.

Septic Tank and Effluent Gravity (STEG) System Improvements – Indian Trail and Stallings



Status

Not Started	Planning	Design	Construction

Scope

Project provides for the condition assessment, design, permitting, and construction of the STEG system in the Indian Trail and Stallings area. The STEG system includes approximately 61,000 feet of 4-inch gravity sanitary sewer piping and associated septic tanks for solids retention. The existing system, while functional, does not meet current collection system criteria and requires replacement. This is a multi-year program, and to date, work has been completed in the Catawba Woods, Stallings Park South, and Brookfield South neighborhoods.

Additional Details

Total Project Estimate	Estimated Completion Date
$9,304,302	FY30

Automated Metering Infrastructure (AMI)

Status

Not Started	Planning	Design	Construction
			■

Scope

Project provides for the assessment of existing metering infrastructure, development of AMI requirements, financial analysis and business case development, and project planning and implementation. Project is in the implementation phase and approximately 99% complete.

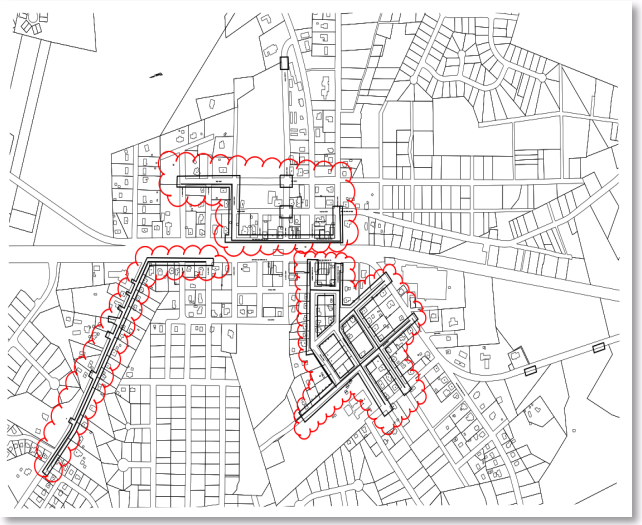
Additional Details

Total Project Estimate	Estimated Completion Date
$18,212,625	FY26

Waxhaw Waterline Replacements

Status

Not Started	Planning	Design	Construction
			■



Scope

Project provides for the replacement of approximately 11,400 feet of aged and undersized cast iron waterlines in the Downtown Waxhaw area.

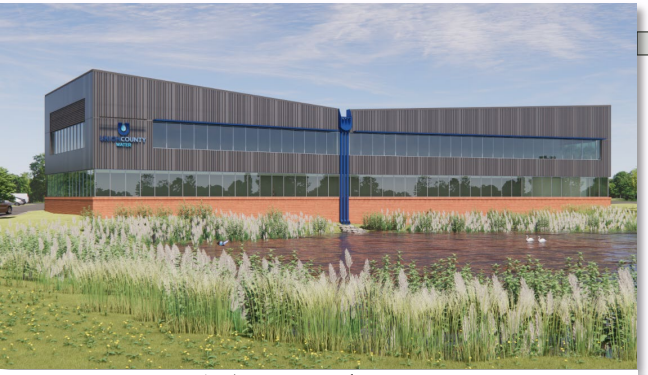
Additional Details

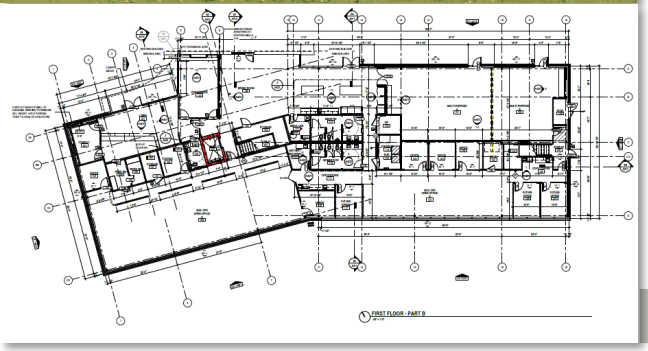
Total Project Estimate	Estimated Completion Date
$3,380,600	FY27

Facilities Projects

UNIONCOUNTY
WATER

Operations Center Expansion





Status

Not Started	Planning	Design	Construction
		■	

Scope

Project provides for the expansion of the Union County Operations Center. Expansion includes approximately 20,000 SF of new construction, 2,200 SF of renovation, a covered materials storage area, and related site improvements.

Additional Details

Total Project Estimate	Estimated Completion Date
$14,543,060	FY28

Crooked Creek WRF Administration and Storage Building Improvements

Status

Not Started	Planning	Design	Construction
			■

Scope

Project provides for the building improvements at the Crooked Creek WRF facility. Building improvements include approximately 1,800 SF of new construction including office, flex use, storage space, and related site improvements at the Crooked Creek WRF.

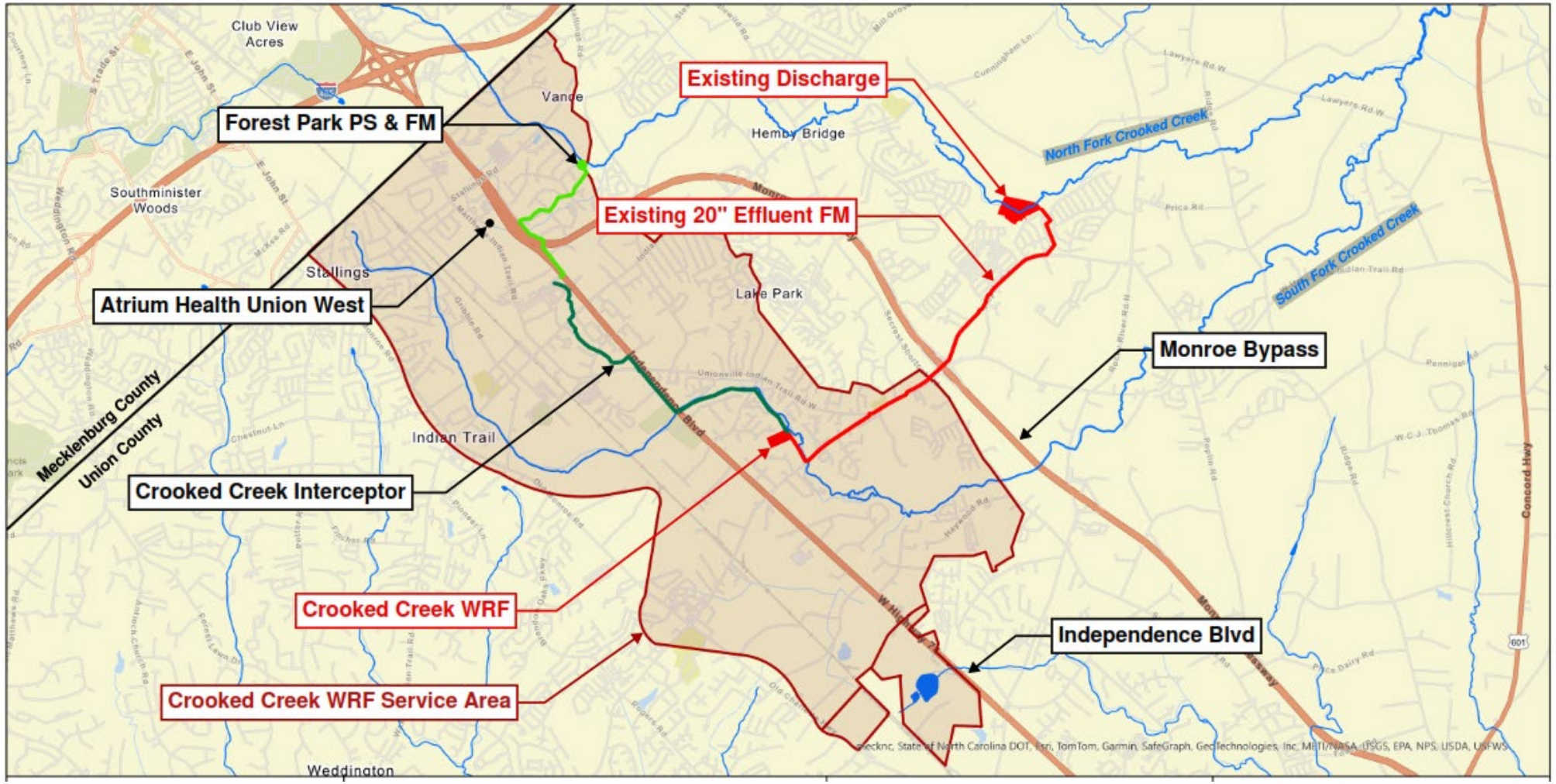
Additional Details

Total Project Estimate	Estimated Completion Date
$1,340,207	FY27

Crooked Creek WRF

UNIONCOUNTY
WATER

Crooked Creek WRF – Basin Overview



Crooked Creek WRF – Daily Flow

Permitted Capacity (MGD)	Actual Average Daily Flow[1] (MGD)	Percent of Actual Flow Used	Permitted Obligated Flow (MGD)	Actual + Permitted Obligated Flows (MGD)	Percent of Permitted Flow Used
1.9	1.211	63.7%	0.469	1.680	88.4%

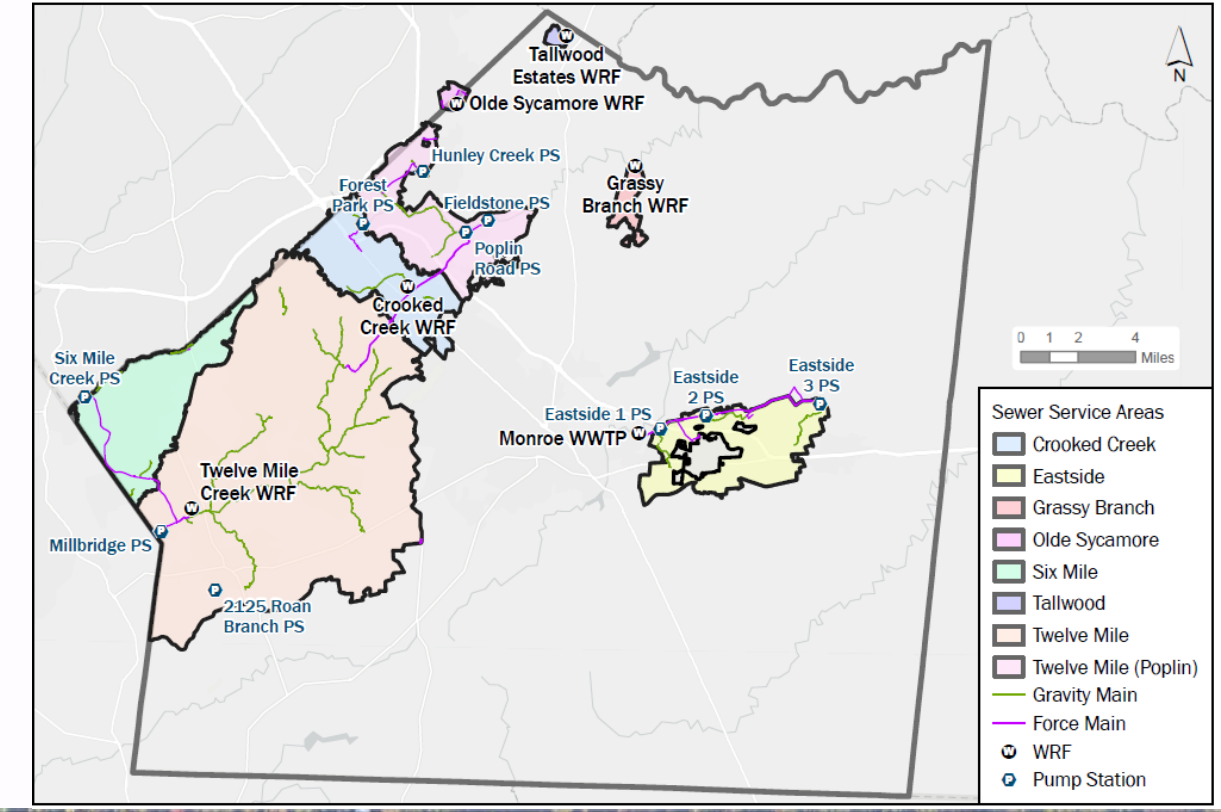
[1]12-month rolling average through March 31, 2026

Development Backlog[1]	Number of Projects	Requested Flow (MGD)
Approved – Permit Submittal Pending	5	0.129
Engineering Plan Review	5	0.173
Sketch Plan Review	8	0.152
Total	**18**	**0.454**

[1]Current through March 31, 2026

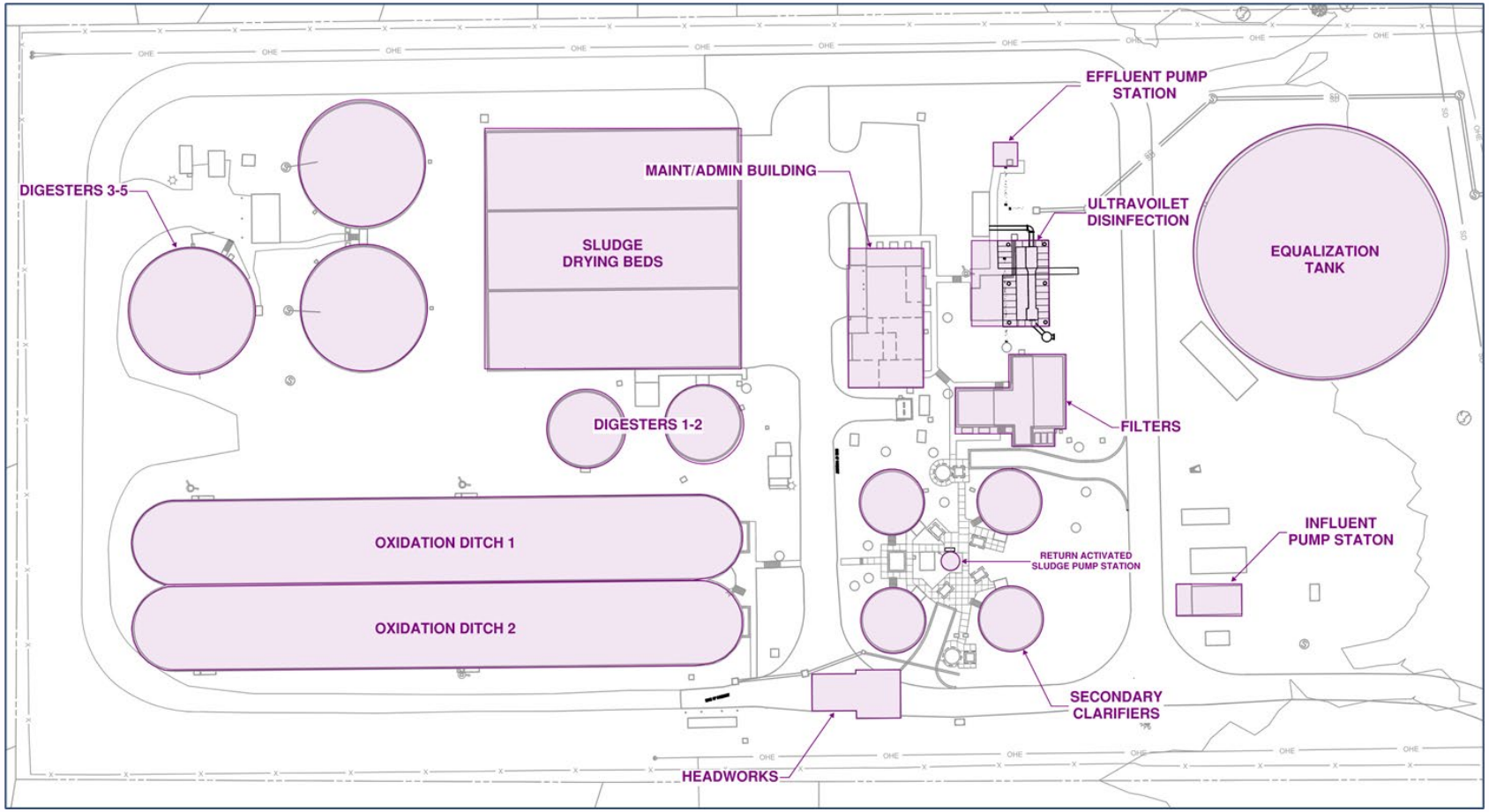
Crooked Creek WRF

- Facility placed in operation in 1991, expanded in 1997, and upgrades/rehabilitation projects completed in 2004, 2019, 2020, and 2022
- Conducted assessment of current condition to determine what's needed to keep CC WRF in operation for the next 20 years
- Options for:
  - Maintaining operations at current permitted capacity of 1.9 MGD
  - Expansion of treatment capacity to:
    - 2.4 MGD
    - 3.8 MGD
    - 6.0 MGD



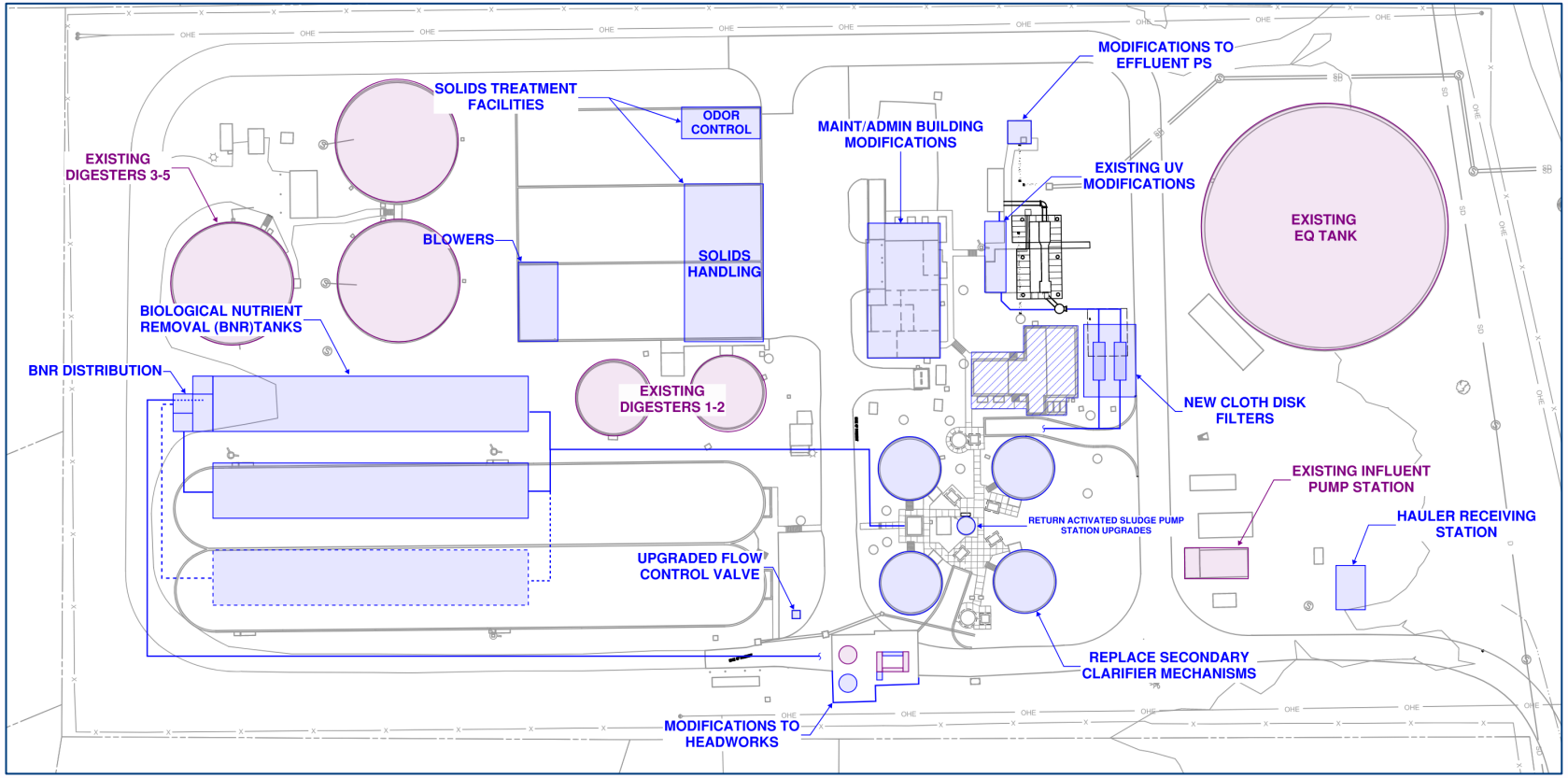
Crooked Creek WRF – Existing Facility

- No nutrient limits are currently in place but are anticipated
- Existing treatment process is not sufficient to meet nutrient limits if required by permit
- Filter replacement project is underway as existing filters are no longer functional
- Solids management will be impacted by Biosolids Master Plan



Crooked Creek WRF – Continued Operations

- Addresses rehabilitation needs of all plant processes and systems including a change to Biological Nutrient Removal (BNR) process
- BNR process sized to meet potential permit required nutrient limits with third BNR tank shown for redundancy
- NCDEQ will not permit a plant expansion without relocation of discharge point due to receiving stream limitations



Crooked Creek WRF – Continued Operations Cost Estimate

- Costs are in 2026 dollars
- Costs include permitting, professional services, and construction
- No additional treatment capacity
- Program of projects implemented over 8 to 13 years in multiple phases depending on delivery method and total program cost

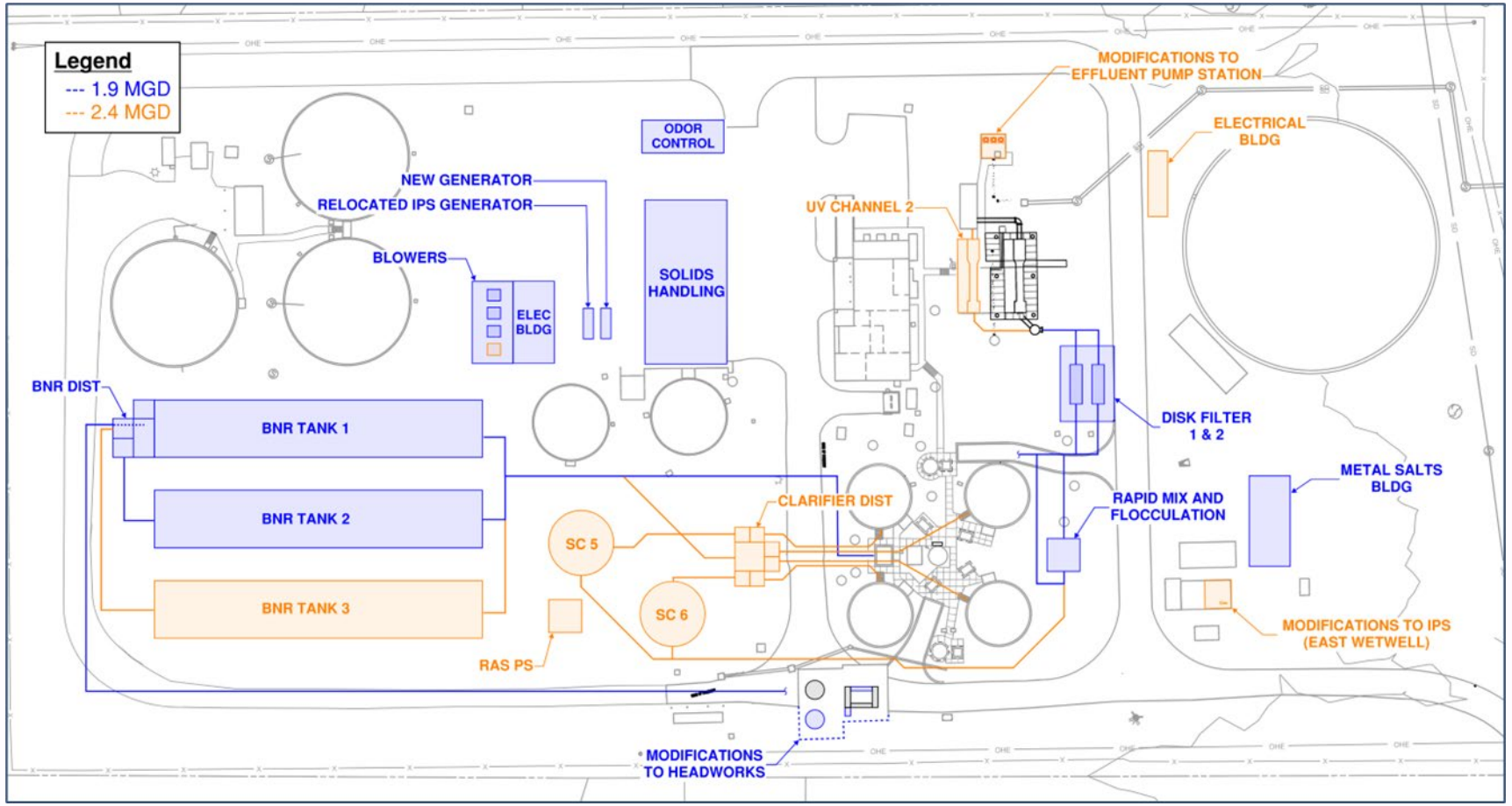
Parameter	Cost Estimate
Administration Building (Renovate Existing)	$2,700,000
Headworks (Existing)	$9,000,000
BNR Tanks (Redundant tank not included)	$26,300,000
Secondary Clarifiers	$2,700,000
RAS Pumping	$800,000
Filters	$3,600,000
UV Disinfection	$1,900,000
Effluent Pump Station	$900,000
Solids Treatment Facilities	$14,100,000
General Site Upgrades	$6,000,000
Electrical and SCADA Upgrades	$10,600,000
WRF Total	**$78,600,000**

Crooked Creek WRF – Expansion Options

- Expand to 2.4 MGD within existing site
- Expand to 6.0 MGD with acquisition of adjacent property
  - Phase 1: 3.8 MGD with acquisition of adjacent property
  - Phase 2: 6.0 MGD with acquisition of adjacent property
- Relocation of discharge is required under any expansion option
- Collection system and conveyance improvements to get flow to the Crooked Creek WRF are not included in cost estimates

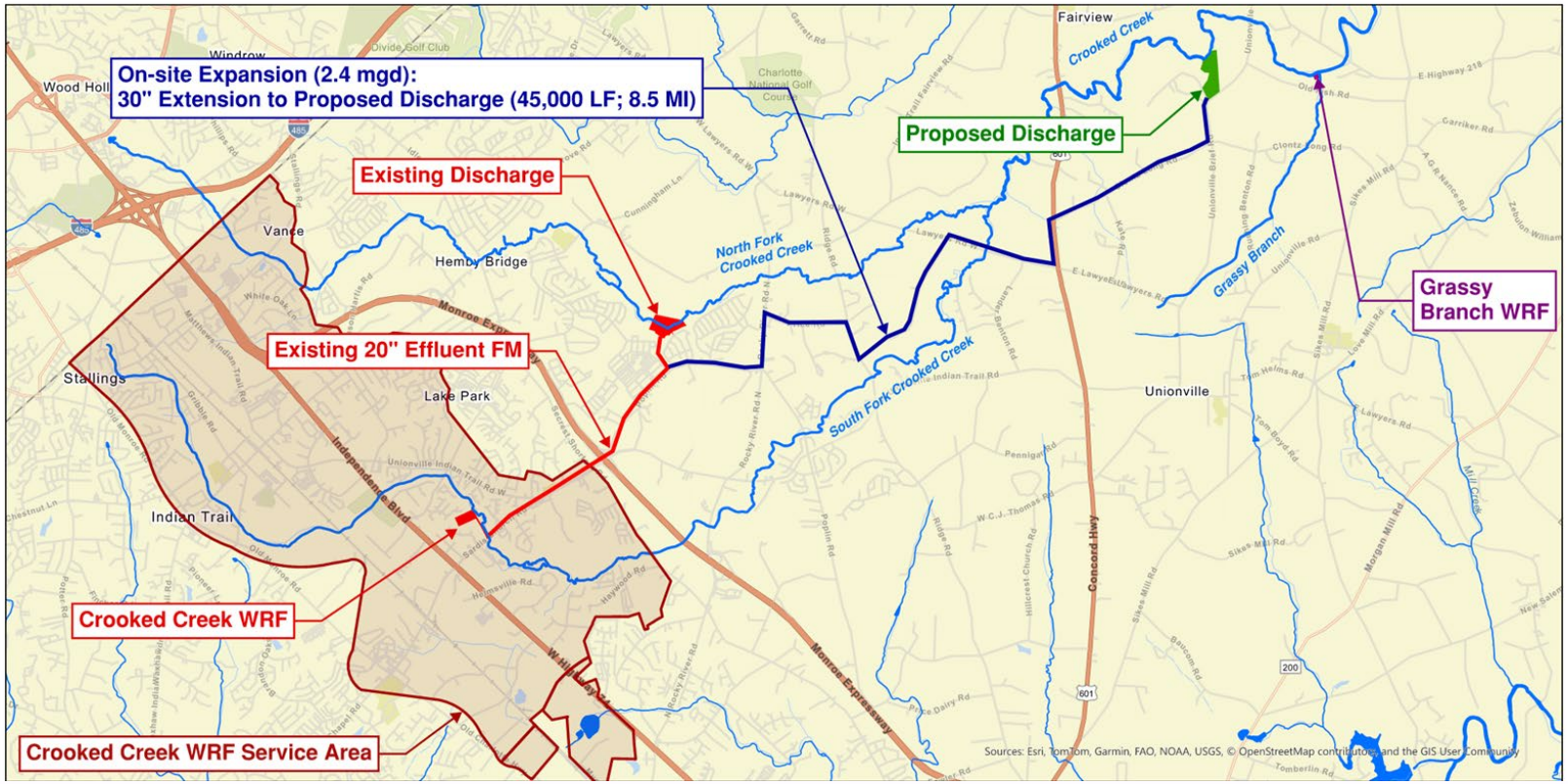
Crooked Creek WRF – 2.4 MGD Expansion

- Represents a capacity increase of 0.50 MGD
- Capacity limited by existing site constraints



Crooked Creek WRF – 2.4 MGD Discharge Relocation

- 2.4 MGD expansion requires extension of the existing force main by 45,000 feet (8.5 miles) using 30-inch piping
- Discharge relocation requires NCDEQ discharge limits approval



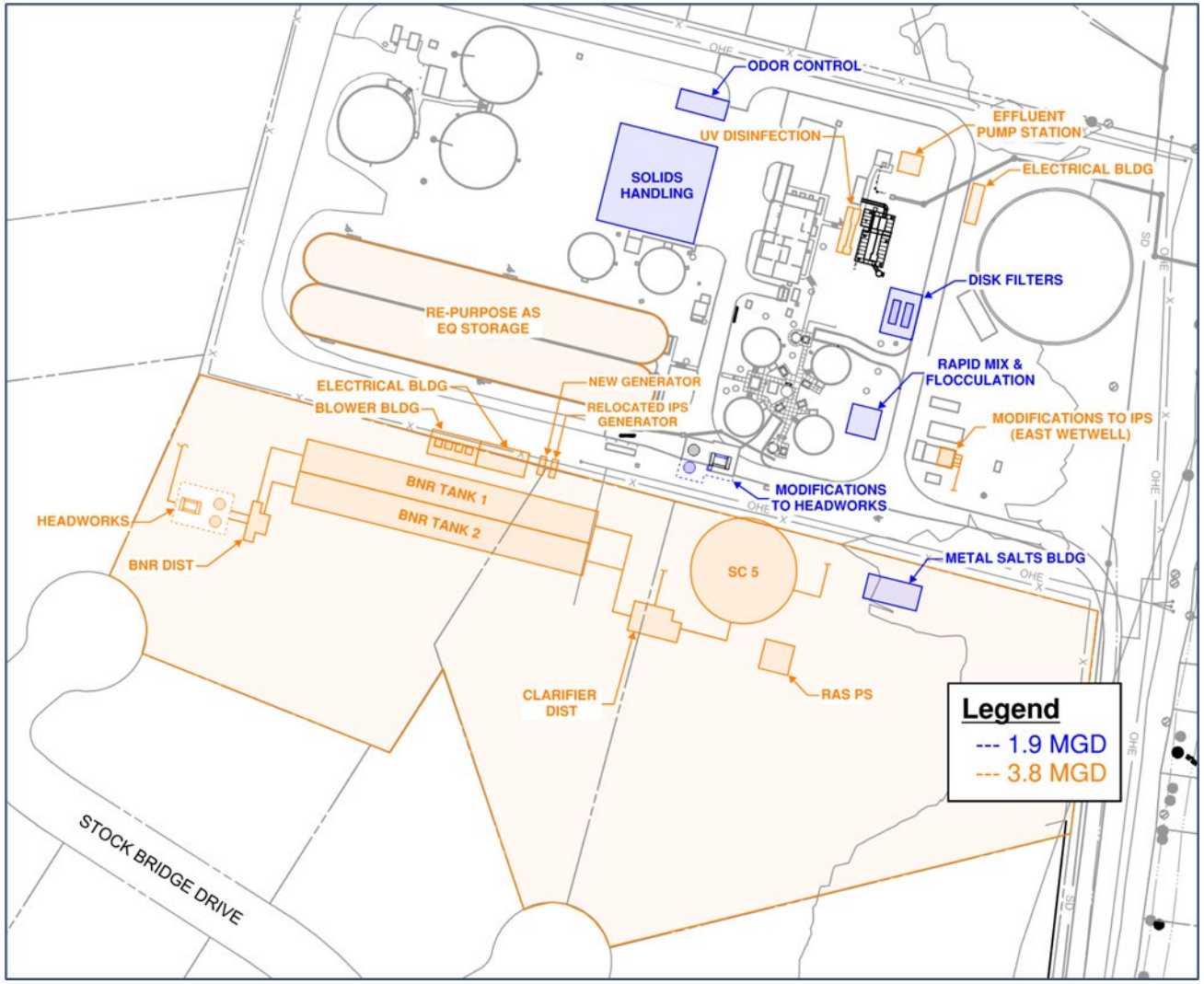
Crooked Creek WRF – 2.4 MGD Expansion Cost Estimate

- Costs are in 2026 dollars
- Costs include permitting, professional services, and construction
- $349/gal cost for additional capacity
- Collection system and conveyance improvements to get flow to the Crooked Creek WRF are not included in cost estimates
- For reference, 12-Mile Creek 7.5-9.0 MGD Expansion is ~$38/gal ($56.4M/1.5MG)

Parameter	Cost Estimate
Administration Building (Renovate Existing)	$2,700,000
Influent Pump Station	$900,000
Headworks (Existing)	$9,000,000
BNR Tanks	$29,000,000
Secondary Clarifiers	$5,900,000
RAS Pumping	$2,400,000
Rapid Mix and Flocculation	$1,100,000
Metal Salts	$2,400,000
Filters	$3,600,000
UV Disinfection	$3,900,000
Effluent Pump Station	$2,000,000
Solids Treatment Facilities	$14,100,000
General Site Upgrades	$6,000,000
Electrical Buildings (Civil/Struc/Arch)	$3,900,000
Electrical and SCADA Upgrades	$26,300,000
WRF Total	**$113,200,000**
Easement Acquisition (Force Main)	$1,500,000
Effluent Force Main	$58,500,000
Property Acquisition (Discharge)	$1,400,000
Total	**$174,600,000**

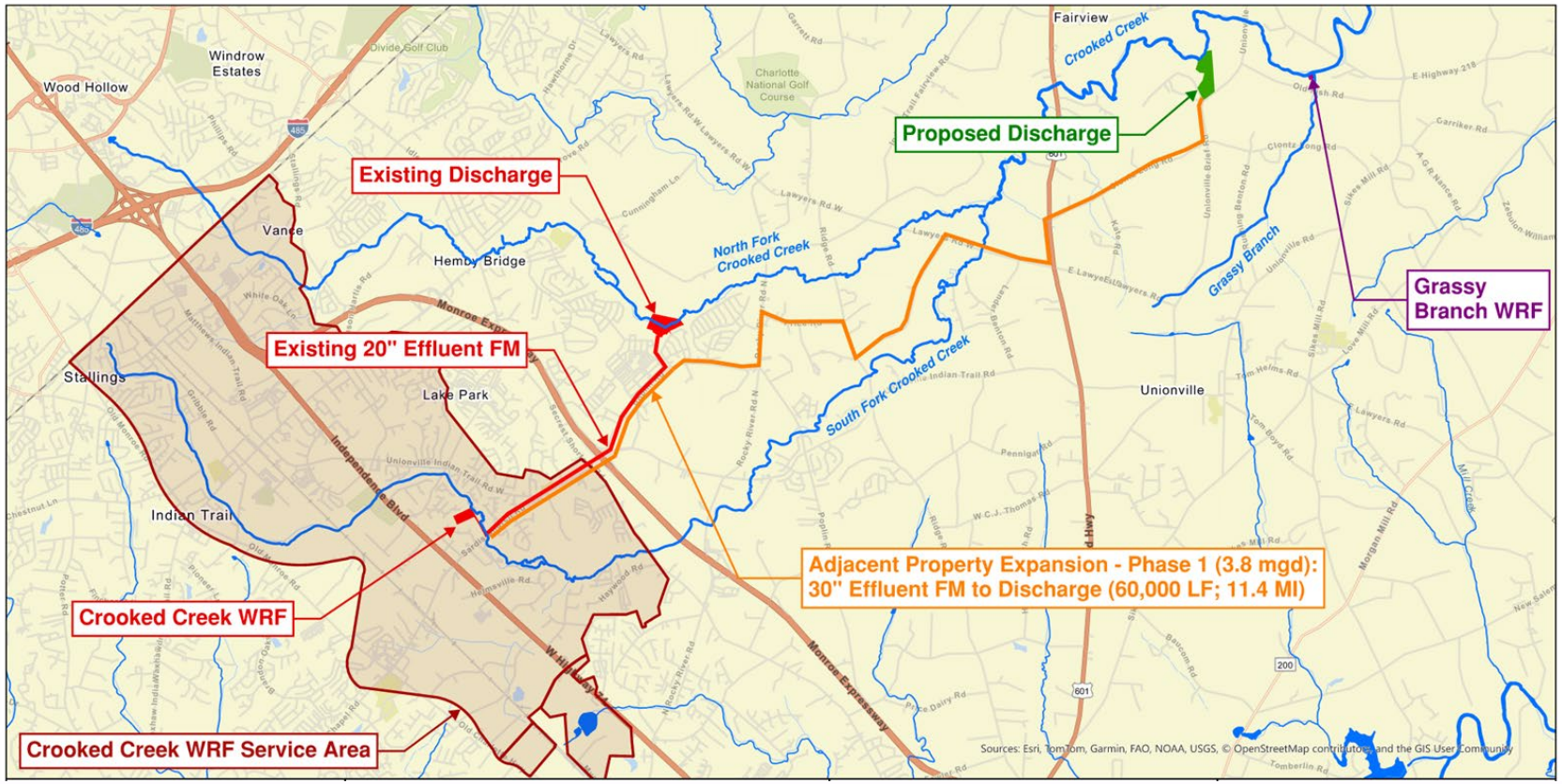
Crooked Creek WRF – 3.8 MGD Expansion (Phase 1)

- Represents a capacity increase of 1.9 MGD
- Requires acquisition of adjacent property
- Layout assumes ultimate expansion to 6.0 MGD



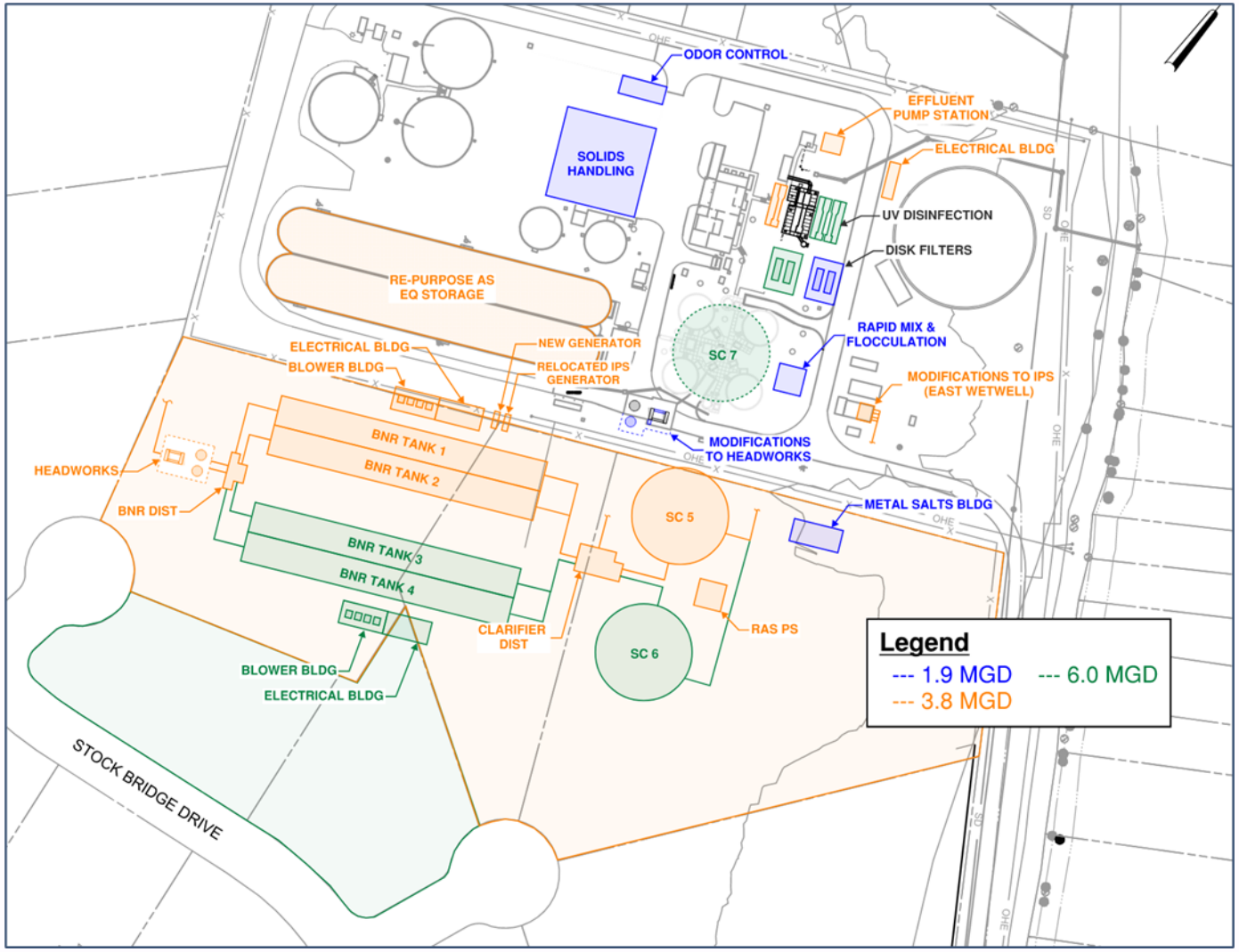
Crooked Creek WRF – 3.8 MGD Discharge Relocation

- 3.8 MGD expansion requires 60,000 feet (11.4 miles) of 30-inch piping from the Crooked Creek WRF to the proposed discharge location
- Discharge relocation requires NCDEQ discharge limits approval



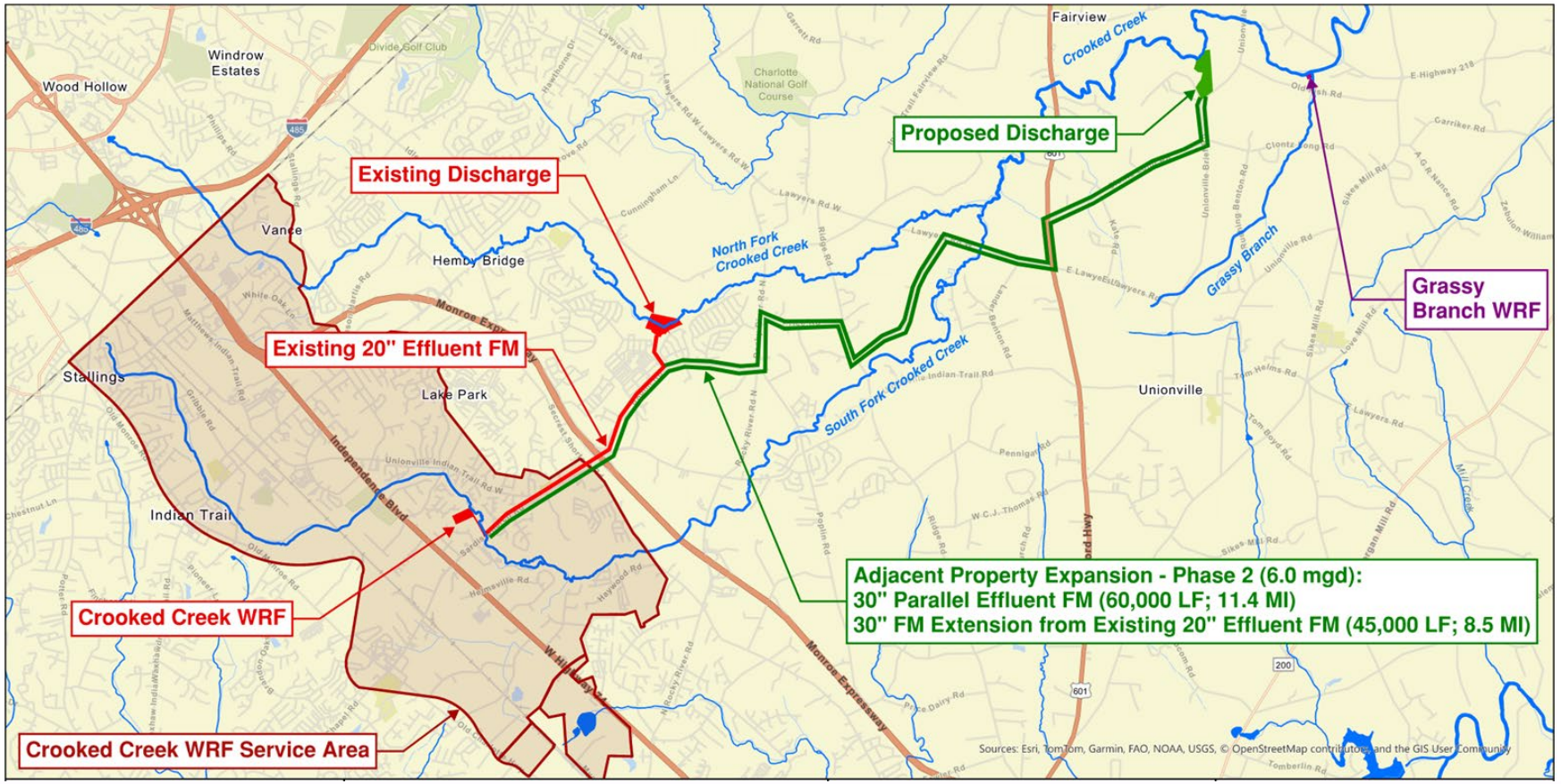
Crooked Creek WRF – 6.0 MGD Expansion (Phase 2)

- Represents a capacity increase of 4.1 MGD
- Requires acquisition of adjacent property



Crooked Creek WRF – 6.0 MGD Discharge Relocation

- 6.0 MGD expansion requires extension of the existing force main by 45,000 feet (8.5 miles) using 30-inch piping and a parallel 30-inch force main for 60,000 feet (11.4 miles) from the Crooked Creek WRF to the proposed discharge
- Discharge relocation requires NCDEQ discharge limits approval



Crooked Creek WRF – 6.0 MGD Expansion Cost Estimate

- Costs are in 2026 dollars
- Costs include permitting, professional services, and construction
- $140/gal cost for additional 1.9 MG capacity (Phase 1)
- $98/gal cost for additional 4.1 MG capacity (Phase 2)
- Collection system and conveyance improvements to get flow to the Crooked Creek WRF are not included in cost estimates
- For reference, 12-Mile Creek Expansion is ~$38/gal ($56.4M/1.5MG)

Parameter	Phase 1 (3.8 mgd)	Phase 2 (6.0 mgd)
Administration Building (Renovation)	$5,400,000	$5,400,000
Influent Pump Station	$3,100,000	$5,200,000
Headworks (Existing)	$9,000,000	$9,000,000
Headworks (New)	$21,900,000	$21,900,000
Flow EQ	$3,800,000	$3,800,000
BNR Tanks	$30,000,000	$51,000,000
Secondary Clarifiers	$14,000,000	$25,200,000
RAS Pumping	$3,800,000	$4,800,000
Rapid Mix and Flocculation	$2,300,000	$2,900,000
Metal Salts	$2,300,000	$2,600,000
Filters	$3,600,000	$7,200,000
UV Disinfection	$3,900,000	$11,700,000
Effluent Pump Station	$2,800,000	$3,500,000
Solids Treatment Facilities	$22,200,000	$22,600,000
General Site Upgrades	$6,400,000	$10,900,000
Electrical Buildings (Civil/Struc/Arch)	$3,900,000	$5,900,000
Electrical and SCADA Upgrades	$35,700,000	$58,200,000
WRF Total	**$174,100,000**	**$251,800,000**
Property Acquisition (Adjacent)	$4,100,000	$6,600,000
Easement Acquisition (Force Main)	$2,100,000	$2,100,000
Effluent Force Main	$83,600,000	$141,600,000
Property Acquisition (Discharge)	$1,400,000	$1,400,000
Total	**$265,300,000**	**$403,500,000**

Crooked Creek WRF – Cost Comparison

	Cost Estimate[1,2]					
	Continued Operation 1.9 MGD	Expansion to 2.4 MGD	Expansion to 3.8 MGD	Expansion to 6.0 MGD	Charlotte Water Stowe WRF[2]	Twelve Mile Creek WRF (6.0 to 9.0 MGD)[3]
Capacity Increase (MGD)	0.0	0.5	1.9	4.1	15.0	3.0
Total Cost	$78.6M	$174.6M	$265.3M	$403.5M	$625M	$117M
Cost of Increase/gallon	N/A	$349[4]	$140[4]	$98[4]	$42	$39

[1]Costs are in 2026 dollars

[2]Total project costs, inclusive of contingency, general conditions, allowances, engineering design, permitting, and construction administration

[3]Actual costs escalated to 2026 dollars

[4]Excluding the effluent force main, the cost per gallon of increase capacity for 0.5 MGD, 1.9 MGD, and 4.1 MGD are $226, $91, and $61, respectively

Crooked Creek WRF – Key Takeaways

- Expansion alternatives do not include costs for collection system improvements to convey additional flow to the Crooked Creek WRF
- Discharge relocation requires NCDEQ approval
- Estimated 5 to 10 years to complete the project

Questions?

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